

**I claim:**

1. A method to prepare an OLED sample for electron microscope examination, comprising steps of:

5        providing an OLED device including a substrate, a first electrode, an organic layer, and a second electrode, wherein said first electrode is located on said substrate, wherein said organic layer is located over said first electrode, wherein said second electrode is located over said organic layer;

         forming a protecting layer over a surface of said OLED device; and

10       performing a milling procedure on said OLED device so as to obtain said OLED sample

2. The method of claim 1, wherein a thickness of said OLED sample is within 0.2  $\mu\text{m}$  to 0.3  $\mu\text{m}$ .

15       3. The method of claim 1, wherein said milling procedure is performed by a focus ion beam (FIB) .

4. The method of claim 1, wherein a thickness of said protecting layer is within 2  $\mu\text{m}$  to 3  $\mu\text{m}$ .

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5. The method of claim 1, wherein said protecting layer is made of platinum (Pt) .

6. The method of claim 1, wherein said protecting layer is made of tungsten  
25       (W) .

7. The method of claim 1, wherein the step of performing a milling procedure further comprises a coarse milling process.

8. The method of claim 7, wherein the step of performing a milling procedure further comprises an intermediate milling process.

5 9. The method of claim 7, wherein the step of performing a milling procedure further comprises a fine milling process.

10. The method of claim 1, wherein said electron microscope is a transmission electron microscope ( TEM ) .

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11. An OLED sample for electron microscope examination, comprising:  
a substrate;

a first electrode, formed on said substrate;

an organic layer, formed on said first electrode;

15 a second electrode, formed on said organic layer; and

a protecting layer, formed on said second electrode;

wherein a thickness of said OLED sample is controlled within 0.2  $\mu\text{m}$  to 0.3  $\mu\text{m}$  for increasing an opportunity that molecules of said organic layer are stroked by transmitting electron beam so as to obtain an image of said

20 OLED sample.

12. The OLED sample according to claim 11, wherein said protecting layer is formed on said second electrode by using a focus ion beam ( FIB ) technique.

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13. The OLED sample according to claim 11, wherein a thickness of said

protecting layer is within 2  $\mu\text{m}$  to 3  $\mu\text{m}$ .

14. The OLED sample according to claim 1, wherein said protecting layer is made of platinum (Pt) .

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15. The OLED sample according to claim 1, wherein said protecting layer is made of tungsten (W) .

16. The OLED sample according to claim 1, wherein said electron  
10 microscope is a transmission electron microscope (TEM) .